

## **REMARKS/ARGUMENTS**

### **I. General Remarks.**

Claims 1-98 are pending in this application. Claim 1 is amended. Claims 6-9, 15-20, 22, 23, and 30-98 are cancelled herein. Claims 1-5, 10-14, 21, and 24-29 are rejected.

All amendments are made in a good faith effort to advance the prosecution on the merits of this case. Support for the amendments may be found throughout the Specification, *e.g.* paragraph [0030]. Please consider the application in view of the following remarks. Applicants thank the Examiner for his careful consideration of this application.

### **II. Remarks Regarding Restriction/Election Requirement.**

During a telephone conference with the Examiner on March 8, 2006, Applicants made a provisional election without traverse to prosecute the invention of Group I, claims 1-14 and 21-29, and also elected "chitosan" as the species to be examined for the hydrophilic polymer component. Affirmation of this election is hereby made. Moreover, the Examiner has identified claims 6-9, 22-23, and 56-61 as being drawn to a non-elected species. Accordingly, Applicants have cancelled claims 6-9, 15-20, 22-23 and 30-98. No amendment to inventorship is necessitated by election. Applicants reserve the right to pursue these claims as filed in a divisional or other continuing application.

### **III. Remarks Regarding Double Patenting Rejections.**

Certain claims stand rejected under the judicially created doctrine of nonstatutory double patenting over U.S. Patent No. 6,476,169, and co-pending Application Nos. 10/760,443, 10/780,995, 10/806,894, 10/825,001, 10/862,132, 10/893,210, and 11/122,836. (Office Action at 6-10.) Submitted herewith is an appropriate terminal disclaimer in compliance with 37 C.F.R. § 1.321 disclaiming the appropriate term. Accordingly, Applicants respectfully submit that the double patenting rejections have been overcome, and respectfully request the withdrawal of these rejections.

### **IV. Rejection of Claims under 35 U.S.C. § 112.**

Claims 2-14 and 21-24 stand rejected under 35 U.S.C. § 102(a) as being indefinite for failing to particularly point out and distinctly claim the subject matter which Applicants regard as the invention. The Examiner states that "[c]laims 2, 3, 5 and 21 recite the limitation

‘hydrophobically modified water-soluble polymer.’ There is insufficient antecedent basis for this limitation in the claim.” (Office Action at 11.) Applicants thank the Examiner for pointing out this inadvertent error and have amended claim 1 to correct this mistake. Support for this amendment may be found throughout the Specification, *e.g.* paragraph [0005]. Accordingly, Applicants respectfully request that this rejection be withdrawn.

**V. Rejection of Claims under 35 U.S.C. § 102.**

Claims 1-5, 10, 12, 14, 21 and 24-29 stand rejected under 35 U.S.C. § 102(a) as being unpatentable over U.S. Patent No. 4,532,052 to Weaver, *et al.* (hereinafter “*Weaver*”). With respect to this rejection the Examiner stated:

Weaver discloses a method for treating a subterranean formation to substantially alter the fluid flow and/or surface characteristics of the formation, said method including injecting into the formation a composition comprising a branched water-soluble organic polymer containing units that can be hydrophilic, hydrophobic or combinations thereof and that have a molecular weight of 900 to 50,000,000. (Abstract; col. 5, lines 30-65; col. 6, lines 29-65; col. 7, lines 7-33; col. 9, lines 49-63; col. 20, line 65 to col. 21, line 6)

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In Procedure O beginning on col. 50, line 5, Weaver discloses an example of altering the permeability of a formation surface (change in water-oil ratio) by injecting into the formation a copolymer of polydimethylaminoethyl methacrylate (PDMAEM have MW of 1 million) grafted with a polyethylene oxide branch (PEO, MW of 15,000). The resulting data showing reduction in water permeability of the formation is shown in Tables 7 and 8. (*See also* Tables 10-13 on col. 57-59 for permeability data of an aqueous treating solution containing 1% of a hydrophilic PDMAEM polymer (MW of 600-800K) branched with a hydrophobic methoxy-polyethylene glycol epichlorohydrin (MPEP) adduct). . .

(Office Action at 11-13.) Applicants respectfully disagree because *Weaver* does not disclose, expressly or inherently, every element recited in the subject claims as required to anticipate the claims under 35 U.S.C. § 102(a). MANUAL OF PATENT EXAMINING PROCEDURE § 2131 (2004) (hereinafter “MPEP”).

In particular, independent claim 1, as amended, recites “introducing a water-soluble relative permeability modifier comprising a hydrophobically modified water-soluble

polymer into a subterranean formation, wherein the hydrophobically modified water-soluble polymer is capable of reducing permeability of the subterranean formation to an aqueous-based fluid.” Nowhere does *Weaver* disclose or suggest this recitation. Rather, *Weaver* is directed to a hydrophobically modified polymer that increases permeability of the subterranean formation to aqueous-based fluids. (*Weaver*, Column 7, lines 43-52) (emphasis added) As depicted in the table in Columns 9 and 10, *Weaver* is directed to the use of hydrophilically modified polymers to decrease water permeability and hydrophobically modified polymers to increase water permeability. Accordingly, *Weaver* does not disclose or suggest the use of hydrophobically modified polymers to reduce water permeability, and thus does not disclose or suggest every element of independent claim 1.

Therefore, independent claim 1 is not anticipated by *Weaver*. The remaining rejected claims depend either directly or indirectly on independent claim 1. All these dependent claims, which include all the limitations of their corresponding independent claim, are allowable for at least the reasons cited above with respect to independent claim 1. Accordingly, Applicants respectfully request withdrawal of this rejection with respect to claims 1-5, 10, 12, 14, 21 and 24-29.

#### **VI. Rejection of Claims under 35 U.S.C. § 103.**

Claims 11-14 stand rejected under 35 U.S.C. § 103(a) as being unpatentable over *Weaver* in view of U.S. Patent No. 6,358,889 to Waggenpack, et al. (hereinafter “*Waggenpack*”). (Office Action at 13.) Applicants respectfully disagree because the Examiner has not established a *prima facie* case of obviousness, in that the cited references do not disclose, expressly or inherently, each and every claim limitation and there is no suggestion or motivation to combine the references with a reasonable expectation of success. See MPEP § 2142.

As discussed in Section V above, independent claim 1, as amended, recites “introducing a water-soluble relative permeability modifier comprising a hydrophobically modified water-soluble polymer into a subterranean formation, wherein the hydrophobically modified water-soluble polymer is capable of reducing permeability of the subterranean formation to an aqueous-based fluid.” Nowhere does *Weaver* disclose or suggest this recitation. Rather, *Weaver* is directed to a hydrophobically modified polymer that increases permeability of the subterranean formation to aqueous-based fluids. (*Weaver*, Column 7, lines 43-52; Table in Columns 9-10) Accordingly, *Weaver* does not disclose or suggest the use of hydrophobically

modified polymers to reduce water permeability, and thus does not disclose or suggest every element of independent claim 1. *Waggenpack* cannot be used to supply this missing recitation.

The Examiner relies on *Waggenpack* for the teaching “well drilling and servicing fluids that include an aqueous fluid containing a hydrophobically modified chitosan polymer, wherein said modified chitosan polymer is formed from the in-situ reaction of chitosan polymer with an anhydride modifying compound. . .” (Office Action at 13-14.) However, *Waggenpack* does not teach or suggest use of hydrophobically modified polymers to reduce water permeability as described in independent claim 1. Accordingly, *Weaver* in view of *Waggenpack* does not teach “introducing a water-soluble relative permeability modifier comprising a hydrophobically modified water-soluble polymer into a subterranean formation, wherein the hydrophobically modified water-soluble polymer is capable of reducing permeability of the subterranean formation to an aqueous-based fluid,” as recited in claim 1 and thus does not disclose or suggest every element of the claims.

Furthermore, there is no suggestion or motivation to combine the references with a reasonable expectation of success. See MPEP § 2142. “Obviousness can only be established by . . . modifying the teaching of the prior art where there is some teaching, suggestion, or motivation to do so found either explicitly or implicitly in the references themselves or in the knowledge generally available to one of ordinary skill in the art.” MPEP § 2143.01. *Waggenpack* is directed to the use of chitosan in drilling fluids, which are used prior to hydrocarbon removal, whereas *Weaver* is directed to the use of modified polymers in injection fluids which are used subsequent to drilling fluids. One of ordinary skill in the art would agree that drilling fluids function differently from injection fluids and maintain varying properties, thus making it unsupported to combine references directed to both types of fluids.

Therefore, independent claim 1 is not obviated by *Weaver* in view of *Waggenpack*. The remaining rejected claims depend either directly or indirectly on independent claim 1. All these dependent claims, which include all the limitations of their corresponding independent claim, are allowable for at least the reasons cited above with respect to independent claim 1. Accordingly, Applicants respectfully request withdrawal of this rejection with respect to claims 11-14.

**VII. No Waiver.**

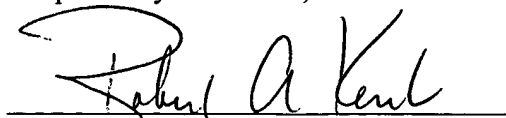
All of Applicants' arguments and amendments are without prejudice or disclaimer. Additionally, Applicants have merely discussed example distinctions from the *Weaver* and *Waggenspack* references. Other distinctions may exist, and Applicants reserve the right to discuss these additional distinctions in a later Response or on Appeal, if appropriate. By not responding to additional statements made by the Examiner, Applicants do not acquiesce to the Examiner's additional statements, such as, for example, any statements relating to what would be obvious to a person of ordinary skill in the art. The example distinctions discussed by Applicants are sufficient to overcome the anticipation and obviousness rejections.

**SUMMARY**

In light of the above remarks, Applicants respectfully submit that the application is now in condition for allowance, and earnestly solicit timely notice of the same. Should the Examiner have any questions, comments or suggestions in furtherance of the prosecution of this application, the Examiner is invited to contact the attorney of record by telephone, facsimile, or electronic mail.

The terminal disclaimer fee of \$130.00 under 37 C.F.R. 1.20(d) is included. Applicants believe that no other additional fees are due in association with the filing of this response. However, should the Commissioner deem that any additional fees are due, including any fees for extensions of time, Applicants respectfully request that the Commissioner accept this as a Petition Therefor, and direct that any additional fees be charged to the Deposit Account of Halliburton Energy Services, Inc., No. 08-0300, for any underpayment of fees that may be due in association with this filing.

Respectfully submitted,



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